

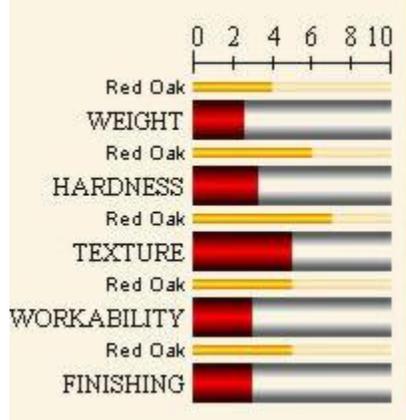
Mahogany African

(*Khaya ivorensis*)



Common Names:

African mahogany, Diala iri, Akuk, Bando, Khaya mahogany, Benin mahogany, Ogwango, Bisselon, Senegal mahogany, Bitehi



Mechanical Values

Category	Green	Dry	Units
Weight	40	31	lbs/cu.ft.
Density (air-dry)		32	lbs/cu.ft.
Specific Gravity		0.44	
Hardness		830	lbs
Stiffness	1155	1391	1000 psi
Bending Strength	7410	10735	psi
Shearing Strength		1505	psi
Max. Crushing Strength	3734	6460	psi
Work to Maximum Load	7	8	in-lbs/in ³
Radial Shrinkage (G->OD)		3	%
Tangential Shrink. (G->OD)		6	%
Volumetric Shrink (G->OD)			%

Environmental Profile

The environmental status of this species within its natural growth range is given as unknown because of lack of information (Source - World Conservation Monitoring Center - 1992).

Distribution

The species is reported to be found in all the timber producing areas of West Africa, from Ivory Coast to Gabon and Cabinda, and is primarily found in the Ivory Coast, Ghana, and Nigeria. Unlike other Khaya species which do not require much rainfall, it is reported to grow in the rain forest in low-lying areas within its range.

Product Sources

Although the species makes up most of the African mahogany on the international market, it is usually sold in a mixture with other Khaya species including *K. anthotheca*, *K. grandifoliola*, and *K. senegalensis*. Origin of consignment can sometimes help identify specific Khaya species. This may be valuable since differences in some properties can be appreciable. Supplies in the lumber form are reported to be quite abundant, and can be found in a wide range of sizes at moderate prices. They are also available in plywood form from many lumber suppliers. African mahogany is reported to be frequently used to replace American mahogany because it is cheaper and more abundant, and can also be used for the same applications. The following species in the database is reported to be similar in color and appearance to the African mahogonies. It is also reported to be as tough: Crabwood (*Carapa guianensis*) The following species in the database is reported to be superior in strength properties to African mahogany: Sapele (*Entandrophragma cylindricum*) Stained timber of the following species in the database is reported to be so similar in appearance to African mahogany that it sometimes requires an expert to detect the difference: African canarium (*Canarium schweinfurthii*)

Tree Data

The tree is reported to reach heights of 110 to 140 feet (33 to 43 m), with trunk diameters of up to 6 feet (1.8 m). The tree usually develops straight, well-formed boles that measure about 40 to 80 feet (12 to 24 m) above strong buttresses that are reported to be up to 8 feet (2.5 m) high.

Sapwood Color

The sapwood is described as creamy-white or yellowish in color, and is not always distinct from the heartwood. It is usually about 2 inches (5 cm) wide.

Heartwood Color

Color is reported to change from light pinkish-brown when freshly cut to a dark reddish shade, usually with a purplish cast, upon exposure. The yellowish-brown color that is present in the paler shades of American mahogonies is reported to be very rare.

Grain

The grain is typically interlocked, but is sometimes straight. Interlocked grain usually produces a striped or roey figure on quartersawn surfaces. Swirl and crotch figures are also reported to be common. Some logs may have brittleheart which can cause thundershakes, or cross-breaks, or heart-breaks. The defect is reported to be more common in figured logs.

Texture

Texture is reported to vary, but is often moderately coarse.

Odor

There is no distinct odor or taste.

Ease of Drying

The timber is reported to dry at a fairly rapid rate with little degrade, except when tension wood is present.

Drying Defects

Strongly developed tension wood may cause excessive distortion during drying. Shrinkage from Green to 12% MC Radial - 2.5% Tangential - 4.5%

Movement in Service

The wood is reported to retain its shape well after seasoning, and shows only small movement in use.

T/R Ratio

2 - This indicator is more meaningful if it is used together with other drying information and actual shrinkage data in the tangential and radial directions. (Refer to the Numerical Values window).

Natural Durability

Trees and logs are reported to be vulnerable to attack by forest longhorn and Buprestid beetles, and the sapwood is easily attacked by powder-post beetles and the common furniture beetle. The wood is reported to be resistant to termite attack in West Africa and heartwood resistance to decay is rated as moderate.

Resistance to Impregnation

The heartwood is reported to be highly resistant to preservative treatment, and the sapwood is moderately resistant.

Blunting

The wood is reported to have moderate dulling effect on cutting edges.

Resistance to Cutting

Cross-cutting and narrow-bandsawing are both rated as satisfactory.

Planing

Machining properties are reported to be affected by interlocked grain and by the woolly nature of the stock being worked. A reduced cutting angle of 20 degrees has been recommended in planing to prevent grain from tearing.

Turning

Turning and other woodworking operations such as mortising, boring, and sanding are all reported to be satisfactory, except in woolly material.

Moulding

Square block is reported to cause the most tearing and French head is not recommended for woolly stock.

Gluing

Gluing properties are reported to be satisfactory.

Nailing

Nailing qualities are reported to be generally satisfactory. Non-ferrous or coated fastenings have been recommended to prevent dark stains on the wood since it reacts with iron under damp conditions.

Polishing

The wood is reported to have good polishing characteristics.

Staining

Staining properties are rated as good.

Steam Bending

The wood is not recommended for steam bending applications since it buckles severely. A supporting strap is reported to give no advantage.

Response to Hand Tools

Heavily interlocked material is reported to be difficult to surface without tearing, but the wood is generally easy to work.

Strength Properties

Strength properties of *K. ivorensis* are reported to be halfway between those of Obeche (*Triplochiton scleroxylon*) and European beech (*Fagus sylvatica*). It has medium bending strength in the air-dry condition, and crushing strength is also medium. It also has moderate properties in hardness and weight. Density is high.